

I claim:

- 1 1. A method for forming a structure element in a layer arranged on a wafer by a first
2 mask and a second trimming mask assigned to the first mask, comprising:
3 providing the wafer with the layer, the first mask, and the second trimming
4 mask;
5 applying a first photosensitive resist layer to the layer;
6 projecting a first mask structure pattern arranged on the first mask into the
7 first resist layer to form an exposed resist structure, the exposed resist structure at
8 least partly surrounding an unexposed resist element;
9 developing the first resist layer;
10 etching the layer with a transfer of the exposed resist structure into the layer, thereby
11 forming an elevated structure element in the layer below the unexposed resist element;
12 removing the first resist layer;
13 applying a second photosensitive resist layer to the layer;
14 projecting a second mask structure pattern arranged on the second
15 trimming mask into the second resist layer to form a second exposed resist
16 structure in the second resist layer, the second exposed resist structure at least
17 partly covering the elevated structure element in the layer;
18 developing the second resist layer; and
19 etching the layer with a transfer of the second exposed resist structure into the layer
20 and the elevated structure element.

- 1 2. The method as claimed in claim 1, wherein projecting the first mask

2 structure pattern arranged on the first mask is carried out using an alternating or a chromeless
3 phase mask.

1 3. The method as claimed in claim 1, wherein projecting the first mask structure
2 pattern arranged on the first mask is carried out using a chrome or halftone phase mask with
3 oblique exposure.

1 4. The method as claimed in claim 1, wherein the elevated structure element is
2 formed in the layer, the elevated structure element including an electrically conductive
3 material.

1 5. The method as claimed in claim 1, wherein projecting the first mask structure
2 pattern arranged on the first mask forms a plurality of elevated metal interconnects, the metal
3 interconnects being arranged substantially parallel.

1 6. The method as claimed in claim 5, wherein, in etching of the layer with a transfer
2 of the second exposed resist structure into the layer, at least one of the elevated metal
3 interconnects is separated into at least two structure elements.

1 7. The method as claimed in claim 1, wherein projecting the first mask structure
2 pattern arranged on the first mask forms the elevated structure element in a partial region by a
3 phase jump and sets up on the first mask between two adjoining transparent regions on the
4 first mask, and etching of the layer with a transfer of the second exposed resist structure into
5 the layer removes the partial region.

1 8. The method as claimed in claim 1, wherein, between removing the first resist
2 layer and applying the second photosensitive resist layer, an intermediate layer is deposited
3 and patterned lithographically.

1 9. The method as claimed in claim 8, wherein an electrically insulating material is
2 used as material of the intermediate layer.

1 10. The method as claimed in claim 8, wherein, in the lithographic patterning of the
2 intermediate layer, the elevated structure element is uncovered below the intermediate layer
3 by removal of a part of the intermediate layer.

1 11. The method as claimed in claim 10, wherein, in projecting the second mask
2 structure pattern arranged on the second trimming mask into the second resist layer, a third
3 exposed resist structure is exposed in the second resist layer, the third exposed resist structure
4 covering a region above the intermediate layer which has not been previously removed
5 during the lithographic patterning.

1 12. The method as claimed in claim 11, wherein the third exposed resist structure for
2 forming a contact hole, is transferred into the intermediate layer, the contact hole being filled
3 with an electrically conductive material in a further step.

1 13. The method as claimed in claim 2, wherein projecting the first mask structure
2 pattern arranged on the first mask forms a plurality of elevated metal interconnects, the metal
3 interconnects being arranged substantially parallel.

1 14. The method as claimed in claim 3, wherein projecting the first mask structure
2 pattern arranged on the first mask forms a plurality of elevated metal interconnects, the metal
3 interconnects being arranged substantially parallel.

1 15. The method as claimed in claim 13, wherein, in etching of the layer with a
2 transfer of the second exposed resist structure into the layer, at least one of the elevated metal
3 interconnects is separated into at least two structure elements.

1 16. The method as claimed in claim 14, wherein, in etching of the layer with a
2 transfer of the second exposed resist structure into the layer, at least one of the elevated metal
3 interconnects is separated into at least two structure elements.